

**REMARKS**

**Summary Of The Office Action & Formalities**

Claims 1, 3-7, 24 and 25 are all the claims pending in the application. By this Amendment, Applicant is canceling claim 4 and amending claim 1.

The Examiner is respectfully requested to initial and return a copy of the PTO-1449 Form submitted with the Information Disclosure Statement filed on April 9, 2001 with his next correspondence. For convenience, Applicant is attaching a copy of the PTO-1449 Form and a copy of the date stamped filing receipt dated April 9, 2001.

The prior art rejections are summarized as follows:

1. Claims 1, 3-5, 24, and 25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Farnsworth (GB 1,483,053, of record) in view of Kohno (USP 5,968,295, of record) and optionally in view of Gaudin (USP 5,591,284, newly cited) .

2. Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Farnsworth, Kohno, and Gaudin as applied in claim 1 above and further in view of Okamoto (USP 5,779,828, of record).

3. Claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Farnsworth, Kohno, and Gaudin as applied in claim 1 above and further in view of Imamura (USP 3,913,652, of record).

Applicant respectfully traverses.

**Claim Rejections - 35 U.S.C. § 103**

Applicant respectfully submits that the Examiner's grounds for rejection continue to be based on an unreasonably broad assertion of what the prior reference, Farnsworth, actually would have taught or suggested to the skilled artisan. Nonetheless, in order to more distinguish the present invention over the cited documents, Applicant is amending claim 1 with claim 4 to form a new claim 1.

To establish a prima facie case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify a reference or to combine reference teachings. *See Manual Of Patent Examining Procedure ("MPEP") at Section 2143.*

Furthermore, the USPTO is held to a *rigorous* standard when trying to show that an invention would have been obvious in view of the combination of two or more references or modification of a single reference. *See, In re Lee*, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002), *citing, e.g., In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) ("Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.").

The case law emphasizes that the "need for specificity pervades this authority." *In re Lee* at 1433 (emphasis added) (*citing In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) ("particular findings must be made as to the reason the skilled artisan, with no

knowledge of the claimed invention, would have selected these components for combination in the manner claimed”).

The current grounds of rejection do not meet the Federal Circuit’s *rigorous* standard for demonstrating that the claimed subject matter would have been obvious in view of the applied art.

Specifically, the Examiner acknowledges that Farnsworth does not explicitly disclose the combination of three rubberized cord layers having the particular cord geometry and widths recited in the claims. Nevertheless, the Examiner takes the following conclusory position:

As to the axial widths of the respective plies, while Farnsworth fails to expressly require the outermost ply have an intermediate width (in relation to inner and middle ply), a fair reading of Farnsworth suggests that a wide range of belt assemblies having varying widths is within the scope of Farnsworth- in particular, the reference places no criticality on which belt ply is the widest or the narrowest, as evidenced by Figures 1-3C. As such, one of ordinary skill in the art at the time of the invention would have found it obvious to form the outer ply narrower than the innermost ply and wider than the middle ply, there being no conclusive showing of unexpected results to establish a criticality for this relationship.

Office Action at page 3. For all the reasons that Applicant has already made of record, which Applicant incorporates by reference as if fully set forth herein, Applicant continues to be of the opinion that the Examiner is relying on improper hindsight to take away more from the disclosure of Farnsworth than what it fairly teaches or suggests to one skilled in the art.

In an effort to support the current rejection, the Examiner cites to Gaudin as allegedly providing further evidence that reconfiguring the plies to achieve Applicant’s claimed structure would have been obvious:

Gaudin is optionally applied to evidence that it is known in the tire industry to stagger the ends of belt plies in order to avoid the buildup of stresses (Column 1, Lines 35-45) and furthermore, it is known in the tire industry that any of a wide number of belt arrangements having varying axial widths provide a suitable belt construction (Column 2, Lines 24-32 and Figures 6-11). It is emphasized that the belt construction of Gaudin depicted in Figures 6-11 is extremely similar to that of Farnsworth in that three steel plies are included.

Office Action at page 3. Applicant respectfully disagrees.

Gaudin actually detracts, rather than supports, the Examiner's grounds of rejection. It is true that Gaudin discloses three and four breaker strip arrangements with various widths, including the three ply arrangement illustrated in Fig. 6 of the reference with the outermost strip wider than the middle strip and narrower than the innermost strip. *However*, Gaudin identifies each of these arrangements with *particular* breaker strip constructions, such that the arrangement in Fig. 6, for example, is not disclosed as being generally applicable to all breaker strip configurations and one skilled in the art would not have taken away such a teaching or even a suggestion in this direction.

To the contrary, Gaudin identifies the arrangement in Fig. 6 with the structure of Fig. 2, in which:

All four breaker strips 1-4 are steel cord fabric of cut steel cords laid parallel to each other and embedded in rubber. The cords of the main plies 1-3 are inclined with respect to the circumferential equator CE of the tire at angles of  $\alpha_1$ ,  $\alpha_2$  and  $\alpha_3$  respectively. These angles have values of  $18^\circ$ ,  $67^\circ$  and  $18^\circ$  respectively. Breaker plies 1 and 2 have their cords inclined in the same direction with respect to the circumferential equator CE whereas the cords of breaker ply 3 are oppositely inclined to the circumferential equator CE. This arrangement of the inclinations  $\alpha_1$ ,  $\alpha_2$  and  $\alpha_3$  of the three main breaker plies 1-3 in relation to the tire circumferential equator CE and the radially disposed carcass ply cords 7 is shown in FIG. 2. The cords of the fourth ply 4 are

inclined also at 18° in the same direction as the third ply 3.  
(Gaudin at column 3, lines 1-14) (emphasis added).

While the present invention has been illustrated by the tire shown in FIG. 1 and as described above, other arrangements of the breaker strip assembly 5 are possible within the scope of the invention, provided that the first and third plies 1 and 3 have opposite inclination angles in the range of 5° to 40° and the second ply 2 has an inclination the range of 40°-85°. (Gaudin at column 3, lines 24-30) (emphasis added).

Alternative arrangements of ply cords directions and breaker ply widths are shown in FIGS. 3-5 and FIGS. 6-11, respectively. These arrangements also provide improved edging rubber looseness characteristics for the heavy duty tire. (Gaudin at column 3, lines 31-35).

Therefore, Gaudin does not support the grounds of rejection, but, to the contrary, would *teach away* from Applicant's invention, since it specifically identifies the breaker strip arrangement of Fig. 6 with the cord construction of Fig. 2. Alternatively, at a minimum the first and third plies 1 and 3 have opposite inclination angles in the range of 5° to 40° and the second ply 2 has an inclination in the range of 40°-85°. Therefore, Gaudin makes it clear that, in the art of pneumatic tire design, the cooperation between the various parts of a pneumatic tire is very critical such that one cannot selectively lift individual features of a disclosed tire construction while ignoring other disclosed features. The Manual Of Patent Examining Procedure ("MPEP") mandates that "the references must be considered as a whole," and therefore requires the Examiner to consider and confront those passages in the applied art that lead away from the claimed invention. MPEP §§ 2141, 2141.02. Accordingly, the rigorous standard required by the case law is even further elevated by the passages in Gaudin that lead the skilled artisan away from the claimed invention.

**In order to better distinguish the present invention over the applied documents,  
Applicant has amended claim 1 to recite the feature of claim 4.**

That is, the relation of the width among the three cord layers is the middle cord layer  $\leq$  outermost cord layer  $<$  innermost cord layer.

Regarding the compression modulus, the Examiner states that Kohno suggests a minimum value for the compression modulus that is 100 times greater than that required by the claimed invention, such that one of ordinary skill in the art at the time of the invention would have readily appreciated the claimed range of "at least 200 kgf/cm<sup>2</sup>." This statement is incorrect.

In the present invention, the compression modulus is carried out by the measuring method shown in FIG. 7. In this method, it is an essential feature that the rubber specimen does not expand in a direction perpendicular to the compression direction. That is, this method is a method imitating a state that rubber is compressed in the actual tire. Therefore, the measured value is naturally larger than that measured by the usual measuring method of compression modulus allowing the expansion of the rubber specimen in the direction perpendicular to the compression direction.

In view of the foregoing, the Examiner is kindly requested to reconsider and withdraw the rejection of claim 1 and claims 3, 5-7, 24, and 25 at least by reason of their respective dependencies.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

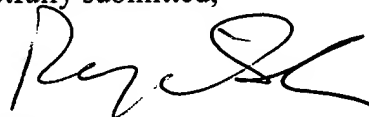
Amendment under 37 C.F.R. § 1.111  
U.S. Application No. 09/398,006

Attorney Docket No.: Q55806

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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**23373**

CUSTOMER NUMBER

Date: July 22, 2004